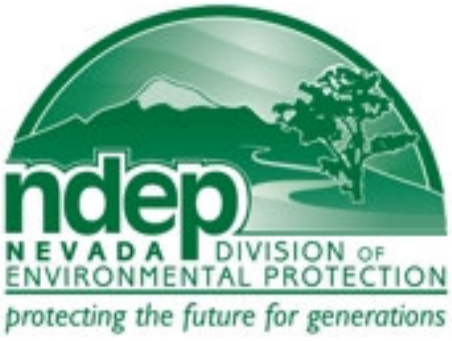
# APPLICATION REVIEW

AND DETERMINATION OF CONTINUED COMPLIANCE

FOR:

# NV ENERGY
## NORTH VALMY GENERATING STATION
Humboldt County, Nevada
HA - 64

# Class I Air Quality Operating Permit
AP4911-0457
FIN A0375
Air Case #05AP0137




BY

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR POLLUTION CONTROL

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# 1.0 INTRODUCTION

Sierra Pacific Power Company d/b/a Nevada Energy - North Valmy Generating Station (Valmy), submitted a Class 1 Air Quality Operating Permit application on December 20, 2004 for the renewal of Class 1 Air Quality Operating Permit AP4911-0457 (Case Log #: 05AP0137). Class 1 Air Quality Operating Permit AP4911-0457 expired on August 17, 2005. Given that Nevada Energy was able to submit a complete application for the renewal of Class 1 Air Quality Operating Permit AP4911-0457 on time, Nevada Energy has been able to operate the Valmy station under the conditions of the expired permit until the renewal permit can be issued. The renewed permit will expire five years from expiration of the previous permit, August 17, 2010.

Valmy consists of two steam electric generating units that can be fired on a number of coal-based fuels with a wide range of heating value and chemical composition. There are 34 permitted sources addressed in this permit renewal application, as well as several insignificant activities. The plant will consist of:

- One Babcock & Wilcox balanced draft pulverized coal-fired boiler
- One Foster Wheeler balanced draft pulverized coal-fired boiler
- Coal Handling System
- Circulating Water Treatment System
- Fly Ash Handling System
- Lime Scrubber System
- Cooling Tower System
- Fuel Oil Storage Tank
- Auxiliary Boiler
- Emergency Fire Pumps

The SIC code for the Valmy station is 4911. SIC code 4911 is assigned to establishments engaged in the generation, transmission, and/or distribution of electric energy for sale.

Under this renewal Nevada Energy has requested two separate modifications to Class 1 Air Quality operating Permit AP4911-0457. The first, received on December 27, 2007 (Case Log #: 09AP0118), is for the replacement of the existing crusher (S2.006) with a new crusher. The new crusher will be placed in the same location as the existing crusher. The emissions from both the existing and new crusher will be controlled by the current dust collection system and baghouse. Current emission limits were based on grain loading and flow and will remain unchanged. Additionally, modeling parameters such as stack height, stack diameter, etc. will remain unaffected.

The second, received on October 7, 2008 (Case Log #: 09AP0114), is for the replacement of two insignificant emergency fire pumps (IA1.048 and IA1.049) with two new emergency fire pumps (S2.027 and S2.028). The new emergency fire pumps will permitted sources due the fact they will be subject to 40 CFR Part 60, Subpart IIII.

Although the new emergency fire pumps will be permitted, their potential-to-emit (PTE) will decrease due to increased efficiency and decreased horsepower (hp). The fire pumps will be 227 hp each and operate on ultra-low sulfur fuel (15 ppm). The new fire pumps will be placed in the same location as the existing fire pumps and exhaust through the existing stacks.

# 2.0 DESCRIPTION OF FACILITY & PROCESS

## 2.1 FACILITY DESCRIPTION

The North Valmy Station consists of two steam electric generating units that can be fired on a number of coal-based fuels with a wide range of heating value and chemical composition. The North Valmy Station generates electricity by releasing chemical energy through combustion of organic fuels, primarily coal. The combustion of coal releases a tremendous quantity of heat that is transferred by a heat exchanger to water. The heated water becomes superheated steam that is used to turn several turbines, which in turn powers a generator creating electricity.

## 2.2 FACILITY LOCATION

The North Valmy Station is located approximately 4 miles north of US Interstate Highway 80 between Winnemucca, Nevada and Battle Mountain, Nevada. North Valmy is at an elevation of 4,400 feet above mean sea level and is located on the valley floor of a large intermountain basin. Mountainous terrain rises approximates 600 feet above the base elevation of the plant at a distance of approximately 13 miles to the east of the plant; to the west, elevated terrain is approximately 10 miles from the plant and rises approximately 500 feet above the valley floor; to the south, elevated terrain is approximately 9 miles from the plant and rises approximately 500 feet above the valley floor; to the north, terrain is approximately 26 miles and rises approximately 600 feet above the valley floor. Activity surrounding the plant consists of mining, ranching, and industrial and commercial activity in Battle Mountain, which is located approximately 15 miles to the east. Residential development is generally sparse throughout the valley with more concentrated development in the towns of Valmy and Battle Mountain.

Access to the plant is made by taking the Stonehouse Exit on I-80 and traveling approximately 13 miles north along a two-lane paved road owned by Nevada Energy. Ownership of the facility is a joint partnership between Nevada Energy and Idaho Power. The property located between the entrance to the private road off of I-80 and the facility is owned/controlled by Nevada Energy. A security checkpoint and fence is installed just prior to entering the facility.

Partial makeup water requirements for the boilers are supplied by dewatering gold mining pits at the Newmont Lone Tree Mine, located approximately 13.5 miles south of the power station on the south side of I-80. The Lone Tree Mine is the nearest BAPC permitted source to the Valmy Station.

## 2.3 DESCRIPTION OF PROCESS

**System #1: Unit #1 Boiler**

The Valmy Facility's principle product is electricity supplied to a distribution grid (Standard Industrial Classification code of 4911). The principle operating scenario for the plant is for the production of steam from pulverized coal in two main units. The engineering payment for Valmy Unit #1 boiler (S2.001) was made to the boiler vendor on July 1, 1977, the recognized contractual commitment is September 20, 1977. According to the application, this unit was constructed in 1979.

Boiler unit #1 (S2.001) is a Babcock and Wilcox dry bottom boiler firing either pulverized bituminous or sub-bituminous coal at a design heat input rate of 2,560 MMBtu/hr. #2 grade fuel oil by itself, or #2 fuel oil blended with "on-spec" used oil is used only to startup this unit from a cold start and for flame stabilization purposes in the coal burners (24) installed in Unit #1.

# 2.0 DESCRIPTION OF FACILITY & PROCESS (continued)

"On-spec" used oil is defined as non-hazardous used oil meeting the requirements of 40 CFR Part 279, Standards for the Management of Used Oil. Valmy receives several loads per year (1,000-2,000 gals/load) of "on-spec" used oil from facilities which it operates. The "on-spec" oil is sampled upon receipt for metals and halogen content in order to comply with the requirements of 40 CFR 60 Part 279, Standards for the Management of Used Oil. Part 279 requires used oil burners to certify a load of used oil as being non-hazardous prior to its combustion. BAPC will stipulate in the permit conditions that the used oil which Valmy burns must be generated only from Nevada Energy facilities, e.g., no outside sources of used oil are permitted to be burned at Valmy. The used oil is stored separately from the main fuel oil storage tank in a 1,850 gallon poly-propylene storage tank.

According to Nevada Energy documentation supplied to BAPC, the maximum design capacity of fuel oil injection per burner in Unit #1 is 1.6 gpm of oil (13.3 MMBtu/hr). Oil is therefore used only for warming up a cold unit (0-12 hrs) and to stabilize the combustion of pulverized coal in a particular burner when bringing it on/off line. As oil is not designed to generate/supplement any electrical production, oil combustion does not represent a separate operating scenario in Unit #1. In Nevada Energy's application, the facility has estimated a maximum usage of fuel oil in Unit #1 for startups/shutdowns at 0.45% of the total annual heat input. Thus, BAPC will recognize the use of fuel oil in Unit #1 as a short-term startup/shutdown fuel and not as a supplemental fuel which would require a separate operating scenario in addition to coal combustion. Unit #1 is requested to operate 8,760 hrs/yr. Historically at Valmy, the maximum fuel oil consumed in any one year plant-wide was 683,791 gallons.

Emissions from Unit #1 are controlled by low $NO_x$ burners and baghouses to remove particulate matter and $PM_{10}$. Emissions from this unit are monitored and recorded by $NO_x$, $SO_2$, $CO_2$, $O_2$, and opacity continuous monitoring and data recording systems.

**System 2: Unit #2 Boiler**

Unit #2 (S2.002) is a Foster Wheeler dry bottom boiler firing either pulverized bituminous or sub-bituminous coal at a design heat input rate of 2,881.02 MMBtu/hr. The Unit #2 boiler (S2.002) contractual commitment is recognized as April 11, 1979. According to the application, this unit was constructed in 1981. #2 grade fuel oil by itself, or #2 fuel oil blended with "on-spec" used is used only to startup this unit from a cold start and for flame stabilization purposes in the coal burners (16) installed in this unit. According to Nevada Energy documentation supplied to BAPC, the maximum design capacity of fuel oil injection per burner is 2.25 gpm of oil (18.7 MMBtu/hr). Oil is therefore used only for warming up a cold unit (0-12 hrs) and to stabilize the combustion of pulverized coal in a burner when bringing it on/off line. As oil is not designed to generate/supplement any electrical production, oil combustion does not represent a separate operating scenario in Unit #2. In Nevada Energy's application, the facility has also estimated a maximum usage of fuel oil for Unit #2 startups/shutdowns at 0.45% of the total annual heat input. Thus, BAPC will recognize the use of fuel oil in Unit #2 as a short-term startup/shutdown fuel and not as a supplemental fuel which would require a separate operating scenario from coal combustion. Unit #2 is also permitted to operate 8,760 hrs/yr.

Emissions from Unit #2 are controlled by low $NO_x$ burners, baghouses to remove particulate matter and $PM_{10}$, and a spray dryer using a lime slurry to scrub $SO_2$ emissions at a minimum removal efficiency of 70%. Emissions from this unit are also monitored and recorded by $NO_x$, $SO_2$, $CO_2$, $O_2$, and opacity continuous monitoring and data recording systems.

# 2.0 DESCRIPTION OF FACILITY & PROCESS (continued)

**System 3: Coal Handling System**
Particulate matter emissions from the coal handling system are controlled by 10 fabric filter collectors (dust collectors located at key transfer points). The coal handling system includes coal handling, crushing, transfer, and conveying equipment. The coal conveyors measure approximately 3,500 feet in length.

The covered conveyors are kept under negative pressure and any resulting emissions from the coal conveyors are ducted to the 10 fabric filter collectors. Coal is brought to the facility on a daily basis by rail from mines in Western states such as Utah and Wyoming. The portion of the coal that is not loaded to the eight storage silos is maintained in the storage yard in a 30-day reserve pile to account for any disruptions in rail service. Fugitive emissions from the reserve piles are controlled through grading, compaction, and the spraying of either foam or surfactant in the conveyors. In the winter, Valmy may not have to spray foam or surfactant in the conveyors if freezing conditions and surface moisture on the coal piles allow the facility to minimize fugitive dust emissions in compliance with the NAC and SIP. In addition, the facility operates a mobile water truck to spray water on the coal pile as needed.

The applicant has submitted emissions inventory data indicating that PM/$PM_{10}$ emissions from these 10 dust collectors be calculated on the basis of their design flowrate (dry standard cubic feet per minute or dscfm) and an estimated outlet grain loading of 0.02 gr/dscf. Although the coal handling system is permitted to operate 8,760 hrs/yr, actual emissions will be less because the equipment can be turned off once a shipment of coal from the railcars has been unloaded.

**System 4 & 5: Circulating Water Treatment System**
The two main boilers each have separate magnesium oxide and soda ash bins to store dry chemicals for feed water conditioning (total of 4 storage bins). Each bin is outfitted with a bin vent fabric filter collector which is permitted to operate 8,760 hrs/yr.

The applicant has submitted emissions inventory data indicating that PM/$PM_{10}$ emissions from these four dust collectors be calculated on the basis of their design flowrate (dry standard cubic feet per minute or dscfm) and an estimated outlet grain loading of 0.02 gr/dscf. Actual emissions will be dependent on how long each bin vent collector device operates during the day.

**System 6 & 7: Fly Ash Handling System**
Each unit is outfitted with a fly ash silo which is controlled by a dust collector permitted to operate 8,760 hrs/yr. The applicant has submitted emissions inventory data indicating that PM/$PM_{10}$ emissions from these four dust collectors be calculated on the basis of their design flowrate (dry standard cubic feet per minute or dscfm) and an estimated outlet grain loading of 0.02 gr/dscf. The fly ash silos will be in operation for the same period of operation as the two units.

Negligible air pollutants are generated from the bottom ash handling system as the bottom ash is quenched and slurried with water prior to its disposal.

# 2.0 DESCRIPTION OF FACILITY & PROCESS (continued)

**System 8, 9, & 10: Unit #2 Lime Scrubber System**
Unit #2 is required by NSPS Subpart Da and NAC 445B.378 to limit the emissions of sulfur dioxide to no more than 0.60 lb/MMBtu with a minimum control efficiency control of 70%, based on a 30-day rolling average. To meet these limits, Unit #2 is controlled by a three-chambered spray dryer (one chamber remains off-line as a spare) which uses a lime slurry injected via centrifugal feeders. Sulfur dioxide emissions are continuously monitored at the inlet and outlet of the spray dryer system to calculate the percent reduction of emissions.

The spray dryer system includes two 35-ton lime day-bins, two 500- ton lime silos, and two 50-ton fly ash bins. Each operational chamber of the spray dryer produces a fly ash-type product which contains an amount of unreacted lime. A portion of this fly ash is recycled in the spray dryer to reduce overall lime usage requirements. Each of the six storage bins/silos has its own fabric filter collector permitted to operate at 8,760 hrs/yr.

The applicant has submitted emissions inventory data indicating that PM/$PM_{10}$ emissions from these six dust collectors be calculated on the basis of their design flowrate (dry standard cubic feet per minute or dscfm) and an estimated outlet grain loading of 0.02 gr/dscf. Actual emissions from the collectors will be dependent on the run time of the Unit #2 sulfur scrubbing equipment.

Unit #1 is not outfitted with a spray dryer since its sulfur dioxide limit is 1.2 lb/MMBtu per NSPS Subpart D. This limit is achievable through coal blending and monitoring.

**System 11: Cooling Towers**
Each main boiler unit is outfitted with an 80,200 gpm (maximum) circulation rate cooling tower. The cooling towers are permitted units in this operating permit because drift losses from each tower (with drift eliminators installed) have been calculated by BAPC to equate to a maximum potential of 148.97 and 148.51 tpy, respectively. This conservative emissions estimate is based on AP-42 Section 13.4 (Wet Cooling Towers) methodology which states that "the particulate matter constituent of the drift droplets may be considered an emission". In the Nevada Energy application material, the facility has stated manufacturer's maximum drift losses from the Unit #1-2 cooling towers of 6.42 and 6.40 gpm, respectively, based on design drift losses of 0.008%. A representative TDS content of 10,600 ppm in the Valmy cooling tower basins has been used to calculate these emissions.

**System 12: #2 Fuel Oil Tank**
Valmy operates a 150,000 gallon #2 fuel oil storage tank permitted to have a throughput limit of 1,500,000 gallons per year. #2 fuel oil can be burned in Units #1-2, the emergency auxiliary boiler, and in several insignificant emission units.

**System 13: Auxiliary (Emergency Warm-Up) Boiler**
Valmy maintains a pre-NSPS (constructed 1979) #2 oil-fired auxiliary boiler rated at a heat input of 111.8 MMBtu/hr. According to Valmy documentation, this boiler is used solely to provide steam for plant warm-up purposes in the rare event of bringing the plant on-line from a totally cold startup situation (e.g., both main units off-line and cold). The auxiliary boiler cannot be used to generate/supplement electrical production. When either main coal unit is off-line, the other operational coal unit provides the warm-up steam requirement for the coal boiler being brought on-line.

# 2.0 DESCRIPTION OF FACILITY & PROCESS (continued)

**System 14: Emergency Diesel Fire Pumps**

Valmy operates two fire pumps which will be used during emergency situations. They operate on ultra-low sulfur diesel fuel (15 ppm), using up to 11.2 gallons of fuel per hour, and they meet Tier 1 emission standards. The fire pumps will be subject to the standards set forth under 40 CFR Part 60, Subpart IIII. The fire pumps are each Cummins model CFP83-F20, with 227 horsepower. Emissions are ducted through a stack 0.5 ft in diameter and 24 ft high before being released into ambient air. It should be noted that the specification sheet indicates emissions less than Tier 1 standards can be achieved with these units, however Cummins guarantees only the Tier 1 standards. Therefore, Tier 1 standards have been requested as the permit limits of the fire pumps.

**Insignificant Activities**

A list of these activities is included as an attachment at the end of the Operating Permit. Key insignificant emission units include the emergency plant fire protection engine (500 hrs/yr cap) and the Units #1-2 emergency electrical generators (500 hrs/yr cap). The emergency diesel generators and fire protection engines meet the qualifications of an emergency generator per NAC 445B.288(3)(l) and thus do not require permitting. In the emissions inventory, the potential to emit (PTE) of insignificant activity internal combustion engines has been estimated at an operational schedule of 500 hrs/yr.

# 3.0 APPLICABLE REGULATIONS

Applicable requirements are those regulatory requirements that apply to a stationary source or to emissions units contained within the stationary source. In Nevada's program, the regulations governing the emissions of air pollutants from which the applicable requirements originate, are derived from four categories of regulations. These four categories consist of the requirements contained in the Nevada Revised Statutes (NRS), the Nevada Administrative Code (NAC), the Applicable State Implementation Plan (ASIP), and the Code of Federal Regulations (CFR, contained in various Parts within Title 40).

## 3.1 GENERALLY APPLICABLE REQUIREMENTS

Of the four categories of regulations governing emissions of air pollutants, there are many generally applicable requirements that apply to stationary sources and emission units located at a stationary source. A comprehensive summary of all the generally applicable permit requirements is contained in Sections I through IV of the proposed operating permit provided in Attachment 4.

## 3.2 SPECIFIC APPLICABLE REQUIREMENTS

The remainder of this section of the review will focus on specific applicable requirements associated with each emission unit or process.

## 3.3 STATE STATUTES & ADMINISTRATIVE CODE

Valmy is subject to Nevada Revised Statutes (NRS) stipulated in NRS 445B.100 through 445B.640, which refer to the control of air pollution. The governing body in the State of Nevada for setting air quality regulation applicable to sources regulated by BAPC is the Nevada State Environmental Commission (SEC).

Valmy is also subject to Nevada Administrative Code (NAC) 445B.001 through 445B.3497, inclusive, which govern the control of air pollution from regulated facilities in the State of Nevada.

Key regulations in the NAC applicable to Valmy's operations include 445B.252 (testing and sampling), 445B.255 (monitoring), 445B.288 (exemptions for certain insignificant activities), NAC 445B.2202 (maximum opacity of emissions), NAC 445B.2203 (maximum emissions of $PM_{10}$ from fuel-burning equipment), NAC 445B.22037 (fugitive dust), NAC 445B.22047 (maximum emissions of sulfur from fuel-burning equipment), and NAC 445B.22063 (specific state requirement for sulfur emissions from Valmy Unit #2).

## 3.4 NEVADA APPLICABLE STATE IMPLEMENTATION PLAN (ASIP)

The Applicable State Implementation Plan (ASIP) is a document prepared by a State or Local air regulatory agency and required to submit to the U.S. EPA for approval. Title I of the Clean Air Act is the statutory authority for the U.S. EPA regulations that require a State to submit a SIP. The contents of the SIP are intended to show how a State, through the implementation and enforcement of the regulations contained in the SIP, will either show how attainment of the national ambient air quality standards (NAAQS) will be achieved or how a State will continue to maintain compliance with the NAAQS. Nevada's most recent ASIP approved by the U.S. EPA is based on State regulations codified in 1982 with revisions/approvals as recently as April 9, 2008. In general, the regulations contained in the ASIP closely parallel the current NAC regulations. However, because the ASIP is partly based on older air quality regulations (at this time), compliance with all of the current NAC regulatory requirements does not necessarily ensure compliance with the ASIP requirements. All of the equipment considered in this application must meet, at a minimum, the standards set forth in the ASIP.

# 3.0 APPLICABLE REGULATIONS (continued)

Specifically, the emission standards contained in ASIP NAC 445B.2203 for particulate matter, 445B.22047 for sulfur emissions, 445B.22017 for maximum opacity, and 445B.22097 for the ambient air quality standards must not be exceeded.

## 3.5 NEW SOURCE PERFORMANCE STANDARDS

**System 1: Unit #1 Boiler**

Nevada Energy entered into contractual obligations to purchase/construct Unit #1 prior to September 18, 1978. Therefore, Unit #1 is subject to the provisions of 40 CFR Part 60 Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971*. Specific emission limits under this Subpart include: a PM limit of 0.10 lb/MMBtu, $SO_2$ limit of 1.2 lb/MMBtu, $NO_x$ limit of 0.70 lb/MMBtu, and an opacity limit of 20% (except for one six-minute period per hour of not more than 27% opacity). The NSPS PM limit of 0.1 lb/MMBtu for Unit #1 is more stringent than the $PM_{10}$ limit as determined by NAC 445B.2203. The NAC $PM_{10}$ limit is equivalent to 0.166 lb/MMBtu, based on the Unit #1 design heat input rate of 2,560.0 MMBtu/hr. Particulate matter from Unit #1 is controlled by baghouses.

**System 2: Unit #2 Boiler**

Nevada Energy entered into contractual obligations to purchase/construct Unit #2 after September 18, 1978. Therefore, Unit #2 is subject to the provisions of 40 CFR Part 60 Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units for Which Construction Is Commenced After September 18, 1978*. Specific emission limits under this Subpart include: a PM limit of 0.03 lb/MMBtu, $SO_2$ limit of 0.6 lb/MMBtu with 70% reduction of potential emissions based on a 30-day rolling average, $NO_x$ limit of 0.50 lb/MMBtu based on a 30-day rolling average, and an opacity limit of 20% (except for one six-minute period per hour of not more than 27% opacity). The NSPS PM limit of 0.03 lb/MMBtu for Unit #2 is more stringent than the $PM_{10}$ limit prescribed by NAC 445B.2203. The NAC $PM_{10}$ limit is equivalent to 0.162 lb/MMBtu, based on the Unit #2 design heat input rate of 2,881.02 MMBtu/hr.

Subpart Da also stipulates continuous monitoring and recording of $SO_2$, $NO_x$, opacity, and oxygen. These monitors are in place at Valmy including a carbon dioxide analyzer required under Valmy's EPA Acid Rain Permit monitoring requirements.

In order to meet the $SO_2$ limit of 0.6 lb/MMBtu with 70% reduction in potential emissions, Valmy has installed a three-chambered spray-dryer system on Unit #2, prior to the baghouse. The spray dryer uses lime to reduce $SO_2$ emissions. Subpart Da requires that the inlet and outlet of this spray dryer be continuously monitored for $SO_2$ emissions so that the percent reduction in emissions be calculated and recorded.

**System 3: Coal Handling System**

An EPA Region 4 letter dated April 16, 1998 from R. Douglas Neeley was relied upon to determine whether any portion of the coal handling equipment at Valmy could be considered a coal preparation plant subject to the provisions of 40 CFR Part 60 Subpart Y, *Standards of Performance for Coal Preparation Plants*. The provisions of Subpart Y are applicable to affected facilities which constructed after October 24, 1974 and process more than 200 tons per day of coal. Both of these conditions are applicable to Valmy which has stated in its application that the capacity of its coal handling equipment is 800 tons per hour.

# 3.0 APPLICABLE REGULATIONS (continued)

Specifically, the Neeley memo states that "Any coal conveyors which are functionally linked to and directly convey coal to or remove coal and refuse from coal processing equipment are subject to Subpart Y". This memo was in reference to NSPS affected coal processing equipment at the Carolina Power & Light Company, Mayo Steam Electric Plant.

For this facility, a determination by Region 4 EPA was made that at the Mayo Steam Electric Plant, the coal crusher, conveyors, and storage silos were all NSPS Subpart Y affected equipment.

For Valmy, this means that the entire coal handling system, with the exception of open storage piles, is subject to a 20% opacity limit applicable to the gases discharged from the 10 dust collectors. By design, any emissions from the conveyors are maintained under negative pressure and exhaust to the dust collectors so the conveyor emissions are included with the dust collector emissions.

Although the NSPS provisions do not stipulate any other performance test, BAPC is requiring an initial Method 5 or 17 and 201A performance tests on 9 of the 10 dust collectors to show compliance with the PM/ $PM_{10}$ emission limits based on the unit's design flowrate and an outlet grain loading equivalent to 0.02 gr/dscf for both PM and $PM_{10}$. One of the 10 units has been exempted (S2.003 - Rotary Stacker) from stack testing since it is a small collector rated at 900 ACFM. The other 9 units which are required to be stack tested handle approximately 10 times or greater the air requirement of S2.003.

**System 12: #2 Fuel Oil Tank**
The 150,000 gallon capacity #2 fuel oil tank was constructed in 1979 but is exempt from the provisions of 40 CFR Part 60 Subpart Ka, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984*, by definition in the NSPS provisions of what constitutes a petroleum liquid. According to 40 CFR Part 60.111a(b), No. 2 fuel oil does not constitute a petroleum liquid, and hence, the storage of No. 2 fuel oil in a storage tank of this age is exempt from the NSPS provisions.

**System 13: Auxiliary Boiler**
The auxiliary boiler was constructed in 1979 and has a design heat input rating of 111.8 MMBtu/hr. Because the auxiliary boiler's construction date pre-dates June 19, 1984, this unit is therefore exempt from NSPS Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*.

**System 14: Emergency Diesel Fire Pumps**
As described previously, the two replacement emergency diesel fire pumps will be subject to the standards set forth under 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. Under Subpart IIII, Nevada Energy will be required to meet strict emission standards in addition to only be able to combust fuel which meets certain requirements.

# 3.0 APPLICABLE REGULATIONS (continued)

## 3.6 FEDERAL NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

NESHAP for hazardous air pollutants (HAPs) are established in the CFR pursuant to Section 112 of the Clean Air Act Amendments of 1990. These standards regulate air pollutants that are believed to be detrimental to human health. The NESHAP program applies to all sources, both existing and new. These standards are codified in Title 40 CFR Parts 61 and 63.

Part 61, which predates the Clean Air Act Amendments of 1990, includes specific standards, reporting and recordkeeping requirements, and test methods for the initial eight hazardous air pollutants: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride. The regulations covering these eight hazardous air pollutants focused on health-based considerations. NESHAPs were established for certain operations that commonly emit the eight hazardous air pollutants.

Other substances were included for consideration due to the serious health effects, including cancer, which may occur from ambient air exposure to those substances. However, no specific restrictions were placed on facilities that used or released these compounds.

Under the Clean Air Act Amendments of 1990, Congress greatly expanded the Air Toxics program, creating a list of 189 substances to be regulated as hazardous air pollutants. Rather than regulating individual pollutants by establishing health-based standards, the new Air Toxics program granted EPA the authority to regulate specific industrial major source categories with NESHAPs based on maximum achievable control technology (MACT) for each source category. Thus, a number of NESHAPs have been established to regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.

The standards in 40 CFR Part 63 are independent of the NESHAPs contained in 40 CFR Part 61 which remain in effect until they are amended, if appropriate, and added to this part. More information on NESHAPs can be found at the EPA Unified Air Toxics Website (http://www.epa.gov/ttn/atw/).

NESHAPs may cover both major sources and area sources in a given source category. Major sources are defined as those facilities emitting, or having the potential to emit, 10 tons per year or more of one Hazardous Air Pollutant (HAP) or 25 tons per year or more of multiple HAPs. Major sources are required to comply with MACT standards. Area sources are defined as those facilities that are not major sources.

The Valmy generating station is not a major source with respect to HAPs, nor does it have any equipment or processes subject to any NESHAP area source standards.

# 3.0 APPLICABLE REGULATIONS (continued)

## 3.7 PREVENTION OF SIGNIFICANT DETERIORATION

The Valmy Facility is an existing major stationary source of PSD pollutants for fossil fuel-fired steam electric plants. Valmy's rated heat capacity of steam producing units (Units #1 & 2) is greater than 250 million Btu/hr and the plant emits and/or has the potential to emit 100 tpy of at least one or more pollutants subject to regulation under the Act (40 CFR 52.21). As this applies to Valmy, the facility is an *existing* major stationary source of regulated pollutants (e.g., major source of $SO_2$, $NO_x$, CO, and $PM/PM_{10}$ emissions) subject to PSD regulations.

Because this Title V application is neither for a new major stationary source or one which requests a modification in the operations of the facility which would emit or have the potential to emit a regulated pollutant at an increased level at or above the PSD significant emission rates, no PSD review is required for this application at this time.

As part of its environmental evaluation, the Valmy facility submitted a modeling analysis to show attainment of the Nevada and National Ambient Air Quality Standards (NAAQS). Although the facility was not required to model PSD increments, a PSD incremental modeling analysis has been submitted as part of this demonstration.

Included in the minor modification applications for the new coal crusher and the replacement of the two emergency fire pumps, NV Energy submitted a New Source Review.

Actual emissions, for the coal crusher, for the 2 year period from January 2003 through December 2004 are based on 4,107 hours per year (hrs/yr) on an annual basis. The PM10 emission rate of 1.75 pounds per hour (lbs/hr) multiplied by 4,107 hrs/yr equate to 3.57 tons per year (tons/yr). the potential to emit of the new crusher is calculated to be 7.65 tons/yr. The difference between the actual emissions and the potential emissions is 3.57 tons/yr. This is below the significance threshold of 15 tons/yr for PM10.

Using PM10 as a surrogate for PM2.5, the 3.57 tons/yr difference between actual and potential emissions is also below the 10 ton/yr significance threshold for PM2.5.

| | Actual Operation | Permitted/Unrestricted Potential Operation |
|---|---|---|
| Operating Hours (Jan. 2003 - Dec. 2004) | 4,107 | 8,760 |
| Annual Emissions (ton/yr) | 3.57 | 7.65 |
| Significance Threshold (ton/yr) | 15 | 15 |
| Annual Less Than Significance? (Yes/No) | Yes | Yes |
| Difference Between Actual and Potential Emissions (ton/yr) | 4.08 | NA |
| Difference Between Actual and Potential Emissions Less Than Significance Threshold? (Yes/No) | Yes | NA |

Actual emissions for Fire Pump #1, for the 2 year period from January 2006 through December 2007 are based on an average of 18.05 hours per year (hr/yr) on an annual basis. This operation equates to a factor of 3.61% when compared to operating hours of 500 hr/yr, which is established in the existing permit and what is being requested in the current application.

# 3.0 APPLICABLE REGULATIONS (continued)

Actual emissions for Fire Pump #2, for the 2 year period from January 2006 through December 2007 are based on an average of 10.30 hr/yr on an annual basis. This operation equates to a factor of 2.06% when compared to operating hours of 500 hr/yr, which is established in the existing permit and what is being requested in the current application.

The Fire Pump #1 PM10 emission rate of 0.561 pounds per hour (lb/hr) multiplied by 18.05 hr/yr equate to a 0.005 ton/yr actual emission baseline. The new Fire Pump's potential to emit is the PM10 emission rate of 0.200 lb/hr multiplied by 500 hr/yr, which equates to 0.050 ton/yr. The difference between the baseline actual PM10 emissions and the potential emissions from the new unit is 0.045 ton/yr, which is less than the significance level of 15 ton/yr under NSR.

The Fire Pump #2 PM10 emission rate of 0.561 lb/hr multiplied by 10.30 hr/yr equate to a 0.003 ton/yr actual emission baseline. The new Fire Pump's potential to emit is the PM10 emission rate of 0.200 lb/hr multiplied by 500 hr/yr, which equates to 0.050 ton/yr. The difference between the baseline actual PM10 emissions and the potential emissions from the new unit is 0.047 ton/yr, which is less than the significance level of 15 ton/yr under NSR.

**COMPARISION OF $PM_{10}$**
**(and $PM_{2.5}$ – assuming $PM_{10}$ is $PM_{2.5}$)**
**ACTUAL TO POTENTIAL EMISSIONS**
**VALMY FIRE PUMPS #1 AND #2**

| | Actual Operation Fire Pump #1 | Actual Operation Fire Pump #2 | Potential Operation of Two Fire New Pumps |
|---|---|---|---|
| Operating hours (Jan. 2006 – Dec. 2007) | 36.1 hr ave = 18.05 hr/yr | 20.6 hr ave = 10.30 hr/yr | 500 hr/yr (each) |
| Annual Emissions (ton/yr) | 0.005 | 0.003 | 0.10 (combined) |
| Significance Threshold (ton/yr) | 15 | 15 | 15 |
| Annual Less Than Significant? (Yes/No) | Yes | Yes | Yes |
| Difference Between Actual and Potential Emissions (ton/yr) | 0.045 | 0.047 | NA |
| Difference Between Actual and Potential Annual Less Than Significant? (Yes/No) | Yes | Yes | NA |

# 3.0 APPLICABLE REGULATIONS (continued)

The Fire Pump #1 SO2 emission rate of 2.05 E-03 lb/hr multiplied by 18.05 hr/yr equate to a 4.72 E-03 ton/yr actual emission baseline. The new Fire Pump's potential to emit is the SO2 emission rate of 1.23 E-03 lb/hr multiplied by 500 hr/yr, which equates to 3.07 E-04 ton/yr. The difference between the baseline actual SO2 emissions and the potential emissions from the new unit is -0.0044 ton/yr, which is less than the significance level of 40 ton/yr under NSR.

The Fire Pump #2 SO2 emission rate of 2.05 E-03 lb/hr multiplied by 10.30 hr/yr equate to a 2.69 E-03 ton/yr actual emission baseline. The new Fire Pump's potential to emit is the SO2 emission rate of 1.23 E-03 lb/hr multiplied by 500 hr/yr, which equates to 3.07 E-04 ton/yr. The difference between the baseline actual SO2 emissions and the potential emissions from the new unit is -0.0024 ton/yr, which is less than the significance level of 40 ton/yr under NSR.

**COMPARISION OF $SO_2$ ACTUAL TO POTENTIAL EMISSIONS**
**VALMY FIRE PUMPS #1 AND #2**

| | Actual Operation Fire Pump #1 | Actual Operation Fire Pump #2 | Potential Operation of Two Fire New Pumps |
|---|---|---|---|
| Operating hours (Jan. 2006 – Dec. 2007) | 36.1 hr ave = 18.05 hr/yr | 20.6 hr ave = 10.30 hr/yr | 500 hr/yr (each) |
| Annual Emissions (ton/yr) | 4.72 E-03 | 2.69 E-03 | 6.13 E-04 |
| Significance Threshold (ton/yr) | 15 | 15 | 15 |
| Annual Less Than Significant? (Yes/No) | Yes | Yes | Yes |
| Difference Between Actual and Potential Emissions (ton/yr) | -0.0044 | -0.0024 | NA |
| Difference Between Actual and Potential Annual Less Than Significant? (Yes/No) | Yes | Yes | NA |

The Fire Pump #1 NOX emission rate of 7.91 lb/hr multiplied by 18.05 hr/yr equates to a 0.0713 ton/yr actual emission baseline. The new Fire Pump's potential to emit is the NOX emission rate of 3.90 lb/hr multiplied by 500 hr/yr, which equates to 0.976 ton/yr.

The difference between the baseline actual NOX emissions and the potential emissions from the new unit is 0.90 ton/yr, which is less than the significance level of 40 ton/yr under NSR.

# 3.0 APPLICABLE REGULATIONS (continued)

The Fire Pump #2 NOX emission rate of 7.91 lb/hr multiplied by 10.30 hr/yr equates to a 0.0407 ton/yr actual emission baseline. The new Fire Pump's potential to emit is the NOX emission rate of 3.90 lb/hr multiplied by 500 hr/yr, which equates to 0.976 ton/yr. The difference between the baseline actual NOX emissions and the potential emissions from the new unit is 0.94 ton/yr, which is less than the significance level of 40 ton/yr under NSR.

**COMPARISION OF $NO_X$ ACTUAL TO POTENTIAL EMISSIONS**
**VALMY FIRE PUMPS #1 AND #2**

| | Actual Operation Fire Pump #1 | Actual Operation Fire Pump #2 | Potential Operation of Two Fire New Pumps |
|---|---|---|---|
| Operating hours (Jan. 2006 – Dec. 2007) | 36.1 hr ave = 18.05 hr/yr | 20.6 hr ave = 10.30 hr/yr | 500 hr/yr (each) |
| Annual Emissions (ton/yr) | 0.0713 | 0.0407 | 1.95 (combined) |
| Significance Threshold (ton/yr) | 15 | 15 | 15 |
| Annual Less Than Significant? (Yes/No) | Yes | Yes | Yes |
| Difference Between Actual and Potential Emissions (ton/yr) | 0.90 | 0.94 | NA |
| Difference Between Actual and Potential Annual Less Than Significant? (Yes/No) | Yes | Yes | NA |

The combined emissions from the new Fire Pumps, when comparing actual emissions to the potential to emit, are a PM10 emission increase of 0.092 ton/yr, an SO2 emission decrease of 0.0068 ton/yr, and a NOX emission increase of 1.84 ton/yr, all of which are less than the significance level of 15 ton/yr under NSR. Additionally, assuming all PM10 is PM2.5, then a PM2.5 emissions increase of 0.092 ton/yr is also less than the significance level of 10 ton/yr under NSR. Therefore replacement of the existing Fire Pumps with the proposed units is not considered significant.

# 3.0 APPLICABLE REGULATIONS (continued)

## 3.8 EPA ACID RAIN PROGRAM

The Clean Air Act Amendments of 1990 (Title IV) established a requirement to reduce the emissions of pollutants contributing to acid rain ($SO_2$ and $NO_x$). It also established a market-based emissions trading program for $SO_2$. U.S. EPA is responsible for developing regulations and implementing the requirements of the acid rain provisions of the Clean Air Act Amendments. As a result, U.S. EPA adopted acid rain related regulations at 40 CFR Parts 72 through 78.

The overall goal of the Acid Rain Program is to achieve environmental and public health benefits through reductions in emissions of $SO_2$ and $NO_x$. To achieve this goal, the program employs both traditional and innovative, market-based approaches for controlling air pollution. Title IV of the Clean Air Act sets as its primary goal the reduction of annual $SO_2$ emissions by 10 million tons below 1980 levels. To achieve these reductions, the law requires a two-phase tightening of the restrictions placed on fossil fuel-fired power plants.

Phase I began in 1995 and affects 263 units at 110 mostly coal-burning electric utility plants located in 21 eastern and Midwestern states. An additional 182 units joined Phase I of the program as substitution or compensating units, bringing the total of Phase I affected units to 445. Emissions data indicate that 1995 $SO_2$ emissions at these units nationwide were reduced by almost 40% below their required level.

Phase II, began in the year 2000, tightens the annual emissions limits imposed on these large, higher emitting plants and also sets restrictions on smaller, cleaner plants fired by coal, oil, and gas, encompassing over 2,000 units in all. The program affects existing utility units serving generators with an output capacity of greater than 25 megawatts and all new utility units.

The NOx program embodies many of the same principles of the $SO_2$ trading program in its design: a results-orientation, flexibility in the method to achieve emission reductions, and program integrity through measurement of the emissions. However, it does not "cap" $NO_x$ emissions as the $SO_2$ program does, nor does it utilize an allowance trading system. The Act calls for a 2 million ton reduction in $NO_x$ emissions by the year 2000. A significant portion of this reduction will be achieved by coal-fired utility boilers that will be required to install low $NO_x$ burner technologies and to meet new emissions standards.

Valmy's boiler and combustion turbines are subject to the provisions of the Acid Rain Program. To comply with EPA's Acid Rain Program for Units #1 & 2, Valmy has submitted a Phase II Permit Application to the EPA.

# 4.0 EMISSIONS INVENTORY

## 4.1 PROPOSED EMISSIONS

For the purpose of setting emission limits for Units #1 & 2, BAPC calculated emission limits per the applicant's proposed limits documented in the application and from the following applicable requirements: current permit conditions in Air Quality Operating Permit No. AP4911-0457, New Source Performance Standards (NSPS), Nevada Administrative Code (NAC) 445B, and the Applicable Nevada State Implementation Plan (ASIP). All permitted emission units are allowed to operate 8,760 hours per year, except for the Auxiliary Boiler and the emergency fire pumps which are not allowed to run in excess of 100 hours/year and 500 hours/year, respectfully.

Particulate matter emissions from the plant dust collector devices were calculated by multiplying an estimated outlet grain loading of 0.02 gr/dscf (per the application) multiplied by the standard volumetric flowrate provided for each collector. For emission inventory and compliance purposes, PM and $PM_{10}$ emission limits are equivalent for any given emissions unit. This assumption is made on the basis that all emissions exiting a fabric filter will be very "small" in diameter, e.g., all particulate matter 10 microns in diameter. For all dust collectors, the emission limits calculated using the 0.02 gr/dscf approach are more stringent than the allowable PM and $PM_{10}$ emission limits calculated by NAC 445B.22033. NAC 445B.22033 determine their allowable emissions for PM and $PM_{10}$ based not on baghouse flowrate, but rather on the allowable throughput of material across an emissions unit, e.g., throughput based on tons per hour of product.

Particulate matter emissions from the two cooling towers were estimated by BAPC using manufacturer drift losses and a representative concentration of total dissolved solids found in the cooling tower basins at Valmy (e.g., manufacturer's specification of 0.008% drift losses and applicant's value of 10,600 ppm TDS in the cooling tower basins). The cooling tower emissions were calculated using the conservative AP-42 assumption that the constituent particulate matter of the TDS in the drift losses can be considered an emission. Since neither AP-42 or the applicant provides an estimation technique to calculate a ratio of $PM_{10}$ to PM, the $PM_{10}$ emissions have been set equivalent to PM.

VOC emissions from the #2 fuel oil storage tank were estimated by the applicant using the EPA Tanks Program.

The applicant has determined fugitive emissions of particulate matter from related secondary activities such as ash unloading, haul roads, and storage piles using various estimation techniques as documented in the application materials and BAPC emissions inventory.

The reader is referred to the BAPC emissions inventory as an illustration of how the proposed permit emission limits (e.g., PM/$PM_{10}$, sulfur, $SO_2$, VOC, and $NO_x$) and inventory values (e.g., CO, VOC, Pb, and other HAPs) were calculated. Annual emission levels of regulated pollutants (tons per year) from the permitted emission units and insignificant combustion units are presented in Table 1 below. Annual fugitive emissions of PM and $PM_{10}$ (tons per year) from related secondary activities associated with the Valmy facility are presented in Table 2 below.

# 4.0 EMISSIONS INVENTORY (continued)

*Table 1 - Annual Emissions from Permitted Units and Insignificant Activities (tpy)*

| Emission Unit | PM | $PM_{10}$ | $NO_x$ | $SO_2$ | CO | VOC | Pb | non-Pb HAPs |
|---|---|---|---|---|---|---|---|---|
| **Unit #1** | 1,121.28 | 1,121.28 | 5,157.89 | 13,455.36 | 36,529.20 | 240.90 | 0.24 | 1.60 |
| **Unit #2** | 378.57 | 378.57 | 5,804.68 | 7,571.32 | 36,529.20 | 240.90 | 0.26 | 0.70 |
| **Coal Handling (14 units)** | 43.49 | 43.49 | | | | | | |
| **Water Treatment (4 units)** | 2.45 | 2.45 | | | | | | |
| **Fly Ash (2 units)** | 3.37 | 3.37 | | | | | | |
| **Unit #2 Scrubber (6 units)** | 11.30 | 11.30 | | | | | | |
| **Cooling Towers (2 units)** | 298.00 | 298.00 | | | | | | |
| **#2 Oil Tank** | | | | | | 0.05 | | |
| **Auxiliary Boiler** | 0.08 | 0.08 | 0.40 | 0.32 | 0.20 | 0.01 | | |
| **Fire Pumps (2 units)** | 0.05 | 0.05 | 0.98 | 0.00 | 0.33 | 0.10 | | |
| **Insignificant Combustion Units** | 0.72 | 0.72 | 10.20 | 0.67 | 2.20 | 0.81 | | 0.02 |
| **Valmy Totals** | **1,859.31** | **1,859.31** | **10,974.15** | **21,027.67** | **73,061.13** | **482.77** | **0.50** | **2.32** |

*Table 2 - Annual Fugitive Emissions from Related Secondary Activities (tpy)*

| Activity | PM | $PM_{10}$ | $NO_x$ | $SO_2$ | CO | VOC | Pb | non-Pb HAPs |
|---|---|---|---|---|---|---|---|---|
| Coal Piles | 103.6 | 19.1 | | | | | | |
| Trestle Unloading | 0.2 | 0.1 | | | | | | |
| Ash Handling | 7.6E-03 | 3.6E-03 | | | | | | |
| Haul Roads | 72.5 | 26.1 | | | | | | |
| **Fugitive Totals** | 176.3 | 45.3 | | | | | | |

# 5.0 COMPLIANCE PLAN

Nevada Energy provided a certification statement in its application materials that the North Valmy Generating Station is in compliance with the applicable requirements of the Federal Clean Air Act and Nevada Administrative Code.

Nevada Energy will, on a timely basis, meet such requirements that may become effective during the permit term. These include, but are not limited to: 1) proposed compliance assurance, or enhanced monitoring regulation; 2) Section 112(r) Accidental Release Prevention regulations; 3) NSPS Subparts triggered by future expansion projects; and 4) PSD review. Nevada Energy states that it will continue to comply with all applicable requirements. Compliance certifications during the permit term will be submitted annually or more frequently if required by the underlying requirement or BAPC.

## 5.1 Compliance Assurance Monitoring Requirements

The Compliance Assurance Monitoring (CAM) plan specifies the method by which a facility will monitor the emissions of pollutants from control devices that would be subject to emission limitations under CAM rules. For example, a boiler subject to specific NSPS limits may achieve its CAM requirements through COMs and CEMs.

As part of its Title V application for renewal, Valmy has submitted a CAM plan based on the uncontrolled emissions of individual emission units and existing monitoring provisions that satisfy the CAM requirements.

The list below describes the Compliance Assurance Monitoring (CAM) applicability to each of the units.

| CAM Sources | Pre-Control (Tons per Year) | CAM Plan Required |
|---|---|---|
| Unit 1 Baghouse | | Yes |
| Unit 2 Baghouse | | Yes |
| Unit 2 Scrubber | | Exempt |
| Trestle | 0.20 | No |
| Rotary Stacker | 57.40 | No |
| Transfer Tower A | 574.00 | Yes |
| Transfer Tower B | 561.20 | Yes |
| Crusher Tower | 765.28 | Yes |
| Tripper Area | 561.20 | Yes |
| Unit 1 Coal Silos A&B | 765.28 | Yes |
| Unit 1 Coal Silos C&D | 765.28 | Yes |
| Unit 2 Coal Silos A&B | 877.52 | Yes |
| Unit 2 Coal Silos C&D | 877.52 | Yes |
| #1 Soda Ash Storage Bin | 61.20 | No |
| #2 Soda Ash Storage Bin | 61.20 | No |
| #1 Magnesium Oxide Storage Bi | 61.20 | No |
| #2 Magnesium Oxide Storage Bi | 61.20 | No |
| Fly Ash Silo Unit 1 | 168.40 | Yes |
| Fly Ash Silo Unit 2 | 168.40 | Yes |
| Scrubber Lime Day Storage Bin L | 178.60 | Yes |
| Scrubber Lime Day Storage Bin L | 178.60 | Yes |
| Scrubber Recycle Ash Day Stora | 325.20 | Yes |
| Scrubber Recycle Ash Day Stora | 325.20 | Yes |
| Lime Storage Silo East | 61.20 | No |
| Lime Storage Silo West | 61.20 | No |
| Cooling Tower Unit 1 | 168.60 | Yes |
| Cooling Tower Unit 2 | 168.60 | Yes |
| Fuel Oil Storage Tank | | exempt |

# 5.0 COMPLIANCE PLAN (continued)

The following describes the requirements for the CAM applicable units.

Unit 1 Baghouse: A baghouse inspection and maintenance program is performed and annual compliance testing is used as an additional indicator of compliance with the PM limit. [Note: A COMS is used to assure compliance with the opacity limit]

Unit 2 Baghouse: A baghouse inspection and maintenance program is performed and annual compliance testing is used as an additional indicator of compliance with the PM limit. [Note: A COMS is used to assure compliance with the opacity limit]

Transfer Tower A: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Transfer Tower B: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Crusher Tower: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Tripper Area Hopper: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Unit 1 Coal Silos A&B: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Unit 1 Coal Silos C&D: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Unit 2 Coal Silos A&B: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Unit 2 Coal Silos C&D: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Fly Ash Silo Unit 1: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Fly Ash Silo Unit 2: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Scrubber Lime Day Storage Bin Loop 1: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

# 5.0 COMPLIANCE PLAN (continued)

Scrubber Lime Day Storage Bin Loop 2: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Scrubber Recycle Ash Day Storage Bin Loop 1: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Scrubber Recycle Ash Day Storage Bin Loop 2: A baghouse exhaust stack compliance test and baghouse inspection and maintenance program is performed.

Cooling Tower Unit 1: A drift eliminator exhaust stack compliance test and drift eliminator inspection and maintenance program is performed.

Cooling Tower Unit 2: A drift eliminator exhaust stack compliance test and drift eliminator inspection and maintenance program is performed.

## 5.2 Accidental Release Prevention

The Chemical Accident Prevention Provisions (CAPP) is contained in 40 CFR Part 68. The North Valmy Generating Station is required to comply with the Chemical Accident Prevention Provisions if the facility stores any chemicals regulated by 40 CFR Part 68 in quantities greater than the respective threshold quantity. On March 24, 2000, BAPC received a letter and documentation from Nevada Energy stating the non-applicability of Part 68 to the Valmy facility based on the facility's storage of listed chemicals below threshold quantities.

## 5.3 Protection of Stratospheric Ozone

The Protection of Stratospheric Ozone provisions are contained in 40 CFR Part 82. The North Valmy Generating Station is required to comply with 40 CFR Part 82 if the facility operates any equipment or stores any products regulated by 40 CFR Part 82. The Valmy application states that 40 CFR Part 68 requirements are not applicable to the North Valmy Generating Station.

## 5.4 Emergency Episodes Plan

On January 31, 2000 (1st draft) and February 11, 2000 (revised draft), Nevada Energy submitted an Emergency Episodes Plan for the facilities owned/operated by Nevada Energy in Nevada, e.g., Ft. Churchill, North Valmy, and Tracy. With minor revisions to the January 31st draft, the February 11th draft was determined acceptable by BAPC. The Emergency Episodes Plan specifies the necessary measures a regulated facility must take as directed by BAPC to minimize air pollutant emissions in case of an air pollution alert in air shed basins upon which the facility can have an impact.

## 5.5 Dust Control Plan

The Director (BAPC) requires that permit holders who disturb or cover 20 acres or more of topsoil to file a dust control plan as one of the necessary measures to prevent particulate matter from becoming airborne (NAC 445B.22037). The dust control plan is a written plan signed by a facility's Responsible official which outlines the measures a facility will use to minimize fugitive dust as required by the NAC and ASIP, e.g., water trucks, surfactant, reclamation, etc.

# 5.0 COMPLIANCE PLAN (continued)

The North Valmy facility disturbs or covers more than 20 acres of topsoil through activities such as unpaved ash haul roads and active coal storage piles. Nevada Energy submitted with the renewal application a dust control plan describing the methods which will be used to minimize particulate from becoming airborne.

# 6.0 AMBIENT AIR IMPACT ANALYSIS

## 6.1 Classification of Air Basin

The Valmy Facility is located in Hydrographic Basin 64, Clovers Area. This basin was triggered for $SO_2$ and $PM_{10}$ on March of 1977.

## 6.2 Ambient Air Impact

The purpose of the air quality analysis undertaken by Nevada Energy's environmental consultant was to demonstrate that the emissions from the facility while operating at 100% steam load would not cause or contribute to a violation of any applicable federal or state ambient air quality standards at publicly accessible areas surrounding the Valmy Facility.

The reader is referred to the air quality modeling report for Valmy prepared by Tetra Tech EM, Inc. (see Valmy Title V renewal application) for a discussion of model selection, meteorology, sources modeled, receptor grids, and model results. The model results show compliance with Nevada and federal ambient air quality standards for the regulated pollutants modeled, e.g., compliance demonstrated for $PM_{10}$, $SO_2$, $NO_2$, CO, and VOC ($O_3$) criteria air pollutant standards. For modeling purposes, emissions were modeled assuming 100% of design heat capacity on Units #1-2, e.g., worst-case scenario.

For this technical review, the results of the Nevada Energy Valmy modeling analysis to determine compliance with state and federal ambient air quality standards are summarized in Table 3 below. The results in Table 3 are the first-high values for all modeled pollutants, plus appropriate background values, since the Nevada ambient standards are never to be exceeded for a criteria pollutant.

*Table 3 - Valmy Criteria Pollutants Modeling Analysis*

| Pollutant | Averaging Period | Total Facility Impact ($\mu g/m^3$)[a] | Nevada Ambient Standard ($\mu g/m^3$) |
|---|---|---|---|
| $PM_{10}$ | 24-hr | 41.4 | 150 |
| | annual | 8.6 | 50 |
| $SO_2$ | 3-hr | 338.6 | 1,300 |
| | 24-hr | 95.6 | 365 |
| | annual | 12.1 | 80 |
| $NO_2$ | annual | 7.73 | 100 |
| CO | 1-hr | 192.6 | 40,000 |
| | 8-hr | 48.3 | 10,000 |
| VOC ($O_3$) | 1-hr | 70.4 | 235 |
| Pb | calendar quarter | 0.007 | 1.5 |

Notes:
a. Ambient air impacts referenced from Table 3-1 and 3-2 of Nevada Energy Valmy Modeling Analysis.

# 6.0 AMBIENT AIR IMPACT ANALYSIS (continued)

## 6.3 PSD Increment Analysis (NV Energy Analysis)

Although not required for a non-PSD Title V permit, Tetra Tech also performed for Valmy a PSD Increment modeling analysis. The PSD increment Analysis, which is also contained in the modeling analysis report, demonstrates that the PSD increments for $PM_{10}$ and $SO_2$ are not exceeded at the requested permit levels.

Once again, the reader is referred to the Tetra Tech air quality modeling report for a discussion of the PSD Increment Analysis. The results of the PSD Increment Analysis are summarized below in Table 4. The results in Table 4 are based on a high second-high basis for those averaging periods not on an annual basis, which is the standard for PSD analyses as federal ambient standards use the high second-high approach.

*Table 4 - PSD Increment Analysis*

| Pollutant | Averaging Period | Modeled Increment Consumption ($\mu g/m^3$)[a] | Class II PSD Increment ($\mu g/m^3$) |
|---|---|---|---|
| $PM_{10}$ | 24-hr | 28.2[b] | 30[c] |
| | annual | 8.4[d] | 17 |
| $SO_2$ | 3-hr | 318.9[b] | 512[c] |
| | 24-hr | 68.5[b] | 91[c] |
| | annual | 12.1[d] | 20 |

Notes:
a PSD Increment impacts referenced from Table 3-3 of Nevada Energy Valmy Modeling Analysis.
b High-second-high modeled concentration
c Not to be exceeded more than once per calendar year.
d Maximum modeled concentration

# 6.0 AMBIENT AIR IMPACT ANALYSIS (continued)

## 6.4 PSD Increment Analysis (NDEP-BAPC Analysis)

As part of its evaluation, the NDEP-BAPC conducted its own increment analysis for the North Valmy Generating Station.

Increment was analyzed on a paired-in-time basis at each receptor in the HA64 study receptor grid to reflect the renewal and modification of Valmy's permit. Receptors within the Valmy plant boundary were excluded from the Valmy specific analysis but left in for all other sources. Increment impacts were evaluated for PM10 and SO2.

Table 1, below, presents the results of the increment analysis for PM10, while Table 2, below, presents the results of the increment analysis for SO2.

These tables list all receptors with modeled exceedances of the increment standard or the receptor with the highest modeled concentration for each pollutant and averaging period. In addition, the tables list the receptor with the highest modeled contribution attributed to Valmy's modifications.

Table 1

PM10 Results
Increment Std. = 30 µg/m^3 24-hour avg
Increment Std. = 17 µg/m^3 annual avg

| Met Year | Avg. Period | Increment Receptors | | | | VA Contrib. | Max. VA Conc. |
|---|---|---|---|---|---|---|---|
| | | Rec.No | X Coord. | Y Coord. | Total Conc | | |
| 2000 | 24 | 1085 | 487521 | 4525202 | 22.01556 | 3.36907 | -- |
| | | 765 | 486721 | 4525502 | 11.24494 | 4.15732 | 4.15732 |
| | Annual | 1043 | 487321 | 4524202 | 6.43661 | 0.50116 | -- |
| | | 765 | 486721 | 4525502 | 2.39160 | 0.65592 | 0.65592 |
| 2001 | 24 | 886 | 486921 | 4524902 | 25.80707 | 0.15169 | -- |
| | | 870 | 486821 | 4525402 | 11.61585 | 3.05640 | 3.05640 |
| | Annual | 1043 | 487321 | 4525202 | 6.09923 | 0.35069 | -- |
| | | 871 | 486821 | 4525502 | 2.47876 | 0.41288 | 0.41288 |

As can be seen in Table 1, above, no receptors have modeled cumulative PM concentrations that exceed the PM increment standards. Therefore, PM emissions due to Valmy's permit modification meet the PSD increment standards for PM.

# 6.0 AMBIENT AIR IMPACT ANALYSIS (continued)

Table 2

| SO2 Results<br>Increment Std. = 512 µg/m^3 3-hour avg<br>Increment Std. = 91 µg/m^3 24-hour avg<br>Increment Std. = 20 µg/m^3 annual avg | | | | | | | |
|---|---|---|---|---|---|---|---|
| Met Year | Avg. Period | Increment Receptors | | | | VA Contrib. | Max. VA Conc. |
| | | Rec.No | X Coord. | Y Coord. | Total Conc. | | |
| 2000 | 3 | 4275 | 509750 | 4517850 | 203.97011 | 0.00000 | -- |
| | | 842 | 486750 | 4527850 | 128.19536 | 0.00002 | 0.00002 |
| | 24 | 2126 | 493250 | 4501850 | 34.07930 | 0.00001 | -- |
| | | | numerous locations | | | 0.00001 | 0.00001 |
| | Annual | 1748 | 490750 | 4505350 | 5.09906 | 0.00000 | -- |
| | | | numerous locations | | | 0.00001 | 0.00001 |
| 2001 | 3 | 23 | 481250 | 4512850 | 174.73875 | 0.00000 | -- |
| | | | numerous locations | | | 0.00001 | 0.00001 |
| | 24 | 4349 | 510750 | 4513350 | 30.83568 | 0.00000 | -- |
| | | | numerous locations | | | 0.00001 | 0.00001 |
| | Annual | 1748 | 490750 | 4505350 | 4.86350 | 0.00000 | -- |
| | | | numerous locations | | | 0.00000 | 0.00000 |

Table 2 shows no exceedances of the increment standards for SO2. Based on the modeling information provided, Valmy's modifications will not contribute to or cause an exceedance of the SO2 increment standard.

# 7.0 AMBIENT MONITORING

Section IX of the Title V Permit Conditions does not contain any significant changes from the Specific State Monitoring Requirements specified in Section V of the existing operating permit for Valmy. Valmy is expected to sample and record meteorological conditions and ambient air quality data (e.g., $PM_{10}$ and $SO_2$) at three sampling stations located at the Valmy plant site for the life of the project until reclamation is complete as required by the specific permit conditions. These monitoring requirements prescribe quarterly reporting to BAPC of the monitoring results. All required ambient air quality and meteorological monitoring is to be performed in accordance with the current Nevada Bureau of Air Quality's *Ambient Air Quality Monitoring Guidelines*.

# 8.0 CONCLUSIONS / RECOMMENDATIONS

Based on the above application review and supporting data and analyses, the proposed Nevada Energy North Valmy Generating Station Title V operating permit renewal demonstrates attainment of state and Federal air quality standards in areas accessible to the public. The permit conditions specify all applicable state and Federal air quality requirements that the North Valmy Generating Station must comply with as of this date. It is BAPC's recommendation that a facility-wide Title V operating permit (No. AP4911-0457.01) be issued with all appropriate restrictions contained therein, following successful completion of public and U.S. EPA review and comment periods.

Appendix 1 - Facility Location Map
Appendix 2 - Plot Plans and Flow Diagrams
Appendix 3 - Detailed Emission Inventory
Appendix 4 - Draft Class I Air Quality Operating Permit AP4911-0457

Francisco Vega, Permit Engineer — Date

Matthew A. DeBurle,
Supervisor, Permitting Branch
Nevada Bureau of Air Pollution Control — Date

# Appendix 1
# Facility Location Map

# Appendix 2
# Plot Plans and Flow Diagrams

# Appendix 3
# Detailed Emission Inventory

# Appendix 4
# Draft Class I Air Quality Operating Permit AP4911-0457